

We claim:

1. A method, comprising:
  - (a) administering a Flt3-L composition to a patient in need of a hematopoietic cell transplant;
  - (b) administering a nonmyeloablative conditioning regimen to the patient; and
  - (c) transplanting hematopoietic cells to the patient.
2. The method of claim 1, wherein the step of administering a Flt3-L composition is selected from the group consisting of:
  - (a) administering the Flt3-L composition prior to transplanting hematopoietic cells to the patient;
  - (b) administering the Flt3-L composition concurrent with transplanting hematopoietic cells to the patient;
  - (c) administering the Flt3-L composition subsequent to transplanting hematopoietic cells to the patient; and
  - (d) any combination of (a)-(c).
3. The method of claim 1, further comprising administering a growth factor or cytokine.
4. The method of claim 1, wherein the step of administering a nonmyeloablative conditioning regimen is selected from the group consisting of:
  - (a) radiotherapy;
  - (b) chemotherapy;
  - (c) immunosuppression; and
  - (d) a combination of (a)-(c).
5. The method of claim 1, further comprising administering one or more immunosuppressants to the patient post-transplant.
6. The method of claim 1, further comprising administering adoptive immunotherapy post-transplant.
7. The method of claim 6, wherein the adoptive immunotherapy is a donor lymphocyte infusion.

8. A method, comprising:
  - (a) administering a Flt3-L composition to a patient in need of a hematopoietic cell transplant,
  - (b) administering nonmyeloablative conditioning regimen to the patient; and
  - (c) transplanting hematopoietic cells to the patient, wherein the hematopoietic cells are autologous hematopoietic cells.
9. The method of claim 8, wherein the step of administering a Flt3-L composition is selected from the group consisting of:
  - (a) administering the Flt3-L composition prior to transplanting hematopoietic cells to the patient;
  - (b) administering the Flt3-L composition concurrent with transplanting hematopoietic cells to the patient;
  - (c) administering the Flt3-L composition subsequent to transplanting hematopoietic cells to the patient; and
  - (d) any combination of (a)-(c).
10. The method of claims 8, further comprising administering a growth factor or cytokine.
11. The method of claims 8, wherein the autologous cells are obtained from autologous bone marrow.
12. The method of claims 8, wherein the autologous cells are obtained from autologous peripheral blood.
13. The method of claims 8, wherein the step of administering a nonmyeloablative conditioning regimen is selected from the group consisting of:
  - (a) radiotherapy;
  - (b) chemotherapy;
  - (c) immunosuppression; and
  - (d) a combination of (a)-(c).
14. The method of claim 8, further comprising administering one or more immunosuppressants to the patient post-transplant.

3191-A

15. The method of claim 8, further comprising administering adoptive immunotherapy post-transplant.
16. The method of claim 15, wherein the adoptive immunotherapy is a donor lymphocyte infusion.
17. A method, comprising:
  - (a) administering a Flt3-L composition to a patient in need of a hematopoietic cell transplant,
  - (b) administering a nonmyeloablative conditioning regimen to the patient; and
  - (c) transplanting hematopoietic cells to the patient, wherein the hematopoietic cells are allogeneic hematopoietic cells.
18. The method of claim 17, wherein the step of administering a Flt3-L composition is selected from the group consisting of:
  - (a) administering the Flt3-L composition prior to transplanting hematopoietic cells to the patient;
  - (b) administering the Flt3-L composition concurrent with transplanting hematopoietic cells to the patient;
  - (c) administering the Flt3-L composition subsequent to transplanting hematopoietic cells to the patient; and
  - (d) any combination of (a)-(c).
19. The method of claim 17, further comprising administering a growth factor or cytokine.
20. The method of claims 17, wherein the allogeneic cells are obtained from allogeneic bone marrow.
21. The method of claims 17, wherein the allogeneic cells are obtained from allogeneic peripheral blood.
22. The method of claim 17, wherein the step of administering the a nonmyeloablative conditioning regimen is selected from the group consisting of:
  - (a) radiotherapy;
  - (b) chemotherapy;

3191-A

- (c) immunosuppression; and
- (d) a combination of (a)-(c).

- 23. The method of claim 17, further comprising administering one or more immunosuppressants to the patient post-transplant.
- 24. The method of claim 17, further comprising administering adoptive immunotherapy post-transplant.
- 25. The method of claim 24, wherein the adoptive immunotherapy is a donor lymphocyte infusion.